

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

62:09

BULBS FOR POTS

AND FALL PLANTING IN THE GARDEN



A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS,
IRIS, ORCHID AND OTHER FAMILIES

Special Features: An Introductory Personal Letter; "How To Grow," articles on Amaryllis, Eucharis, Blood Lilies, Anthuriums, African Violets, etc.; over 250 plant items; Books and Garden Supplies.

FALL 1951



CECIL HOUDYSHEL

1412 Third St.

La Verne, California



Chas. E. F. Geradorff
1825 N. Capitol St.
Washington, D.C.

LIBRARY
RECEIVED
★ SEP 27 1957 ★
U. S. Department of Agriculture

Return Postage Guaranteed

If not interested, please
refuse delivery.

Sec. 34.66, P. L. & R.

A Personal Letter, to You

Dear Floral Friends:

We have just finished writing this Fall, 1951 catalog, and nothing remains except to write you this introductory letter. We receive so many letters that we cannot answer, that, many years ago, we began writing the catalog letters. The catalog this fall was carefully revised in order to omit repetitions and to shorten it without omission of important culture information, in order to allow space for a longer letter.

Several months before beginning to prepare a new catalog we begin research for new items to list in addition to those we grow. We are always experimenting too, about the culture of plants, in order to learn more about the best methods. We believe we have added some information to the lore of growing plants. We try also to learn from other growers and often ask questions of them and of experienced amateurs. We give you this information in our catalogs.

We are asking one of these questions here and we hope to have over 100 answers. *Brunsvigia rosea*, (*Amaryllis belladonna*) thrives and flowers well in Calif., and some nearby states. We have had a few reports of failure to flower in La., and Miss. Does it grow well and flower for you in your state or does it fail in any way? We do not wish to sell plants to customers who may not be able to succeed.

Our research for plants this year has been very successful. We are able to offer certain items that have been hard to get and therefore high priced, at a much lower sum. Prominent among these are *Lycoris aurea*, the Golden Spider Lily, sometimes known as the Hurricane Lily. These have been prominent flowers in the gardens in Saint Augustine, Fla., where they flower about the beginning of the season of the big winds. So far as we know the history of its introduction is obscure but occurred long ago. It is the most tender *Lycoris* and hardy only in the south and along our two coast lines.

Lycoris alba is much more rare and is little known. As these two items are coming to us from Japan this year we are able to sell them at a much lower price. As they have not yet arrived, we don't know the exact date of delivery but it will be as soon as we get them and we hope in time for you to see the flowers this year.

We are happy to announce success in crossing *Marica northiana* by *M. gracilis*. The result is more profuse flowering thru a longer season and better flowers. These hybrids so far as we know are the first ever produced in this genus. We are offering them for the first time this year altho our stock consists only of a 40 ft. row. Thanks to Mrs. Wilson and her book, "Enjoy Your House Plants," *Maricas*, long a rare house plant in the north, are becoming better known and more popular. Their curious characters add to the interest of the pretty flowers.

One of the most amazing things in the history of horticulture is the wide distribution, and popularity of *Saintpaulias* or African Violets within less than 60 years after the discovery of the first wild plant. They seem to be our most popular house plant and it may happen that more African Violets will sometime be grown than all other house plants. This growth in popular favor in such a short time can be attributed to the fact that nature had already created them in a climate within 10° of what we prefer in our living rooms. In fact many grow wild where the mean average temperature is 70° which is what most people like. Myself, I prefer 80° and so do some others. About the only thing we must add to our kitchen or living room conditions is to add more humidity, which is easily done.

When nature created them thousands or even millions of years ago, she must have been thinking about modern houses and modern humans. No artisan could more skillfully join the parts of his creation than nature has done in this instance. In the distant past was created that which was exactly fitted to a modern pattern. Nature further contributed to modern needs by making them especially amenable to the art of the hybridizer and already we have many more colors in the flowers, great improvement and variations in the foliage. Some of the "girls" are "out of this world."

Therefore we present you in this catalog a longer list of *Saintpaulias* and especially all the new ones that can be obtained in a commercial quantity along with the best of

the older ones. We also give you a long article on their culture. While it will enable you to grow these lovely little plants successfully, you will also want to get the books by Mrs. Wilson and Mrs. Rector. These books can cover the subject much more completely than we can do in this catalog. They will help you to become not merely successful, but expert.

Scilla Peruviana is a bulb for mild climates. They are hardy in Brooklyn, Long Island and most of both Atlantic and Pacific coasts, in the interior to Va., Ky., to Okla., and west. They are fine garden bulbs for the south or for pots in the north but have been so neglected or overlooked that our stock built up to more than we can take care of. Fortunately we have received orders for a few thousands wholesale. This seems to indicate an awakening demand. We have lowered the price on these for the present. They are very early Spring bloomers outdoors when flowers are not plentiful. 25c ea. or 6 for \$1.00 is a very low price for these rather large bulbs.

Do you want some of the newer Daffodils? Then note our listing of Daffodils. We have 11 varieties that we must close out as we must discontinue growing them. They are priced at 5c ea. for smallest size up to 20c for double nose. They are sorts that usually sell for 30c to 50c ea., for small round bulbs.

Our listing of Iris reticulata at \$1.00 doz. is really a "scoop," as the reporters would say. This is the smallest and daintiest Iris and sweetly fragrant. In pots, one can have it in flower at Christmas. They are hardy too in milder northern states.

There are many other items that we would like to mention in this preview of the catalog but space does not permit. But we certainly must not omit the present Orchid listings at new lower prices.

Everywhere amateur growers are succeeding with Cymbidium, Cypripedium and Cattleya orchids. One customer wrote to us that he had never seen a Cattleya orchid until a friend gave him a poor, sick plant that he was unable to flower. This customer had no experience and no culture guide, but he removed it from the pot and cleaned the plant and repotted it. He grew it in his kitchen and in two years it flowered. With the benefit of proper equipment and correct advice any good gardener can grow them.

We are offering you Cymbidiums as low as \$2.00 per front bulb with foliage. Flowering sized Cypripediums are offered at \$3.50 to \$7.50. Cattleya orchids are listed as low as \$1.50 and larger ones at \$2.50, \$3.50 and \$5.00. At \$5.00 to \$7.50 we can sometimes send a plant in bud sheath that will soon flower.

Hobbies are more important than we sometimes give them credit. Nearly everyone collects something or has some other avocation. Even fishing and hunting or playing golf may be classed as hobbies.

No hobby gives more real pleasure than collecting and growing plants. It satisfies our collecting instinct; rewards us with beautiful foliage and flowers; gives an incentive for physical activity and inspires thought and study. For the old, it helps to keep the body and mind active and in good working order. If we do not use an arm it becomes small and soft and finally useless. We need to continue to use all our physical and mental resources or we lose them.

Growing house plants is of equal value to paraplegics and shut-ins. Younger, healthy people who work in either the trades or the professions need the mental relaxation this hobby supplies. Any hobby is good but flowers, we think, are the best of all.

"Reading maketh a full man," was not said of modern literature, magazines and newspapers, but it is still true. It might be classified as a hobby. Whether it is or is not, it is important that we read much. One valuable result is the expansion of one's vocabulary. The mind of man depends upon the words it knows. Since words are the symbols of ideas one can scarcely have a definite idea without a word to express it. The mind can scarcely rise above the words it knows. Much research has shown that mental power and vocabulary grow together at equal pace, but not loquacity, for a talkative person may have a small vocabulary.

I read the other day that 48% of Americans do not read books; 60% do not read magazines and 16% never read a newspaper. If true, it explains why we vote as we sometimes do, and why our mass actions are many times unintelligent. The less intelli-

gent hold the balance of power in voting and in public relations affairs and these are the ones who are controlled by emotions or prejudice, rather than by reason.

Every family should take at least one good daily newspaper, a conservative one that is not sensational. One that prints important news and good editorials by able writers; a news review; good home magazines and story magazines of a high standard; garden magazines.

We read in order to gain information about things that interest us and for entertainment or relaxation. We must sometimes guard against false ideas and wrong ideals. One might gather that fine living means fine foods, fine clothing, luxurious homes. We are inclined to wonder if they are not sometimes more likely to signify useless living and if fine thinking may not be more significant. It may be that Gandhi was happier than most princes. He was certainly more important.

Self indulgence does not add much happiness nor does it lengthen life. Gardening does. It seem to be the perfect hobby.

One of our hobbies, Mrs. Houdyshel's and mine, is Cocker Spaniels. They are, we think, about the most perfect household pet, because they are the most affectionate, highly intelligent, reasonably obedient and are beautiful.

Our black cocker female, Cinderella, has a pedigree that is almost entirely in red ink, which indicates champions. We decided to breed her to the best male in So. Calif., so we chose Ch. Gold Chip who has won his championship in both Canada and America. The best male from this litter was appraised at \$75.00 when about 6 weeks old. He is a beauty, a golden blonde like his sire. He is registered, he was raised scientifically, he has all puppy and adult shots against distemper, rabies, etc., and we will take \$50.00 for him (which is less than he cost us) but we require that he have a good home. He is now 7 months old. We prefer to sell him to someone in So. Calif., who can see him before buying and avoid express shipment.

With best wishes for garden success.

Sincerely,
Cecil Houdyshel

TERMS AND INSTRUCTIONS FOR ORDERING

The prices in this catalog cancel all former quotations.

California Customers must add 3% Sales Tax.

Remit by check or M. O. If stamps are sent, send \$1.05 for \$1.00. We do not carry accounts. Remit the full amount of your order in advance.

C.O.D. We do not ship bulbs C.O.D.

Postage prepaid on orders of \$1.00 or over. Under \$1.00, add 15c extra.

Insurance and Special Handling. Please note changes in rates. Insurance up to \$5.00 value costs 5c. \$5.00 to \$10.00 costs 10c. \$10.00 to \$25.00 costs 15c. Over \$25.00 costs in proportion to \$25.00 rate. Special Handling gives your package the same handling as First Class mail and hastens delivery. More safe. Up to 2 lbs. costs 15c. 2 lbs. to 20 lbs. costs 20c for each package. Heavier in proportion.

Special Delivery of packages costs you 25c for 2 lbs. or less. 2 to 10 lbs. costs 35c. Over 10 lbs. costs 45c. This hastens transportation and delivery of your package as it will also be given the same service as Special Handling without an extra fee. Most postoffices require that you sign for the package. Thus it is not left outside to freeze.

Insurance, Special Handling and Special Delivery are for your protection. Please remit the amount required if you want this protection.

Express is much the safest transportation. Express cars are heated in winter but mail cars are not. Express also handles more carefully and assumes more responsibility for delivery in good order. But it costs more and we ship that way only collect. We add extra bulbs to approximate cost of postage saved to us.

Prices given are usually for one bulb. A dozen costs 10 times the price of one; 6 are

sold at dozen rate; 100 cost 70 times the cost of one or 7 times the cost of one doz.; 50 are sold for the price of 4 doz., not at 100 rate, unless otherwise specified. Quantity rates apply to one variety only and all in one bag.

Wholesale. We do not give discounts to dealers on small quantities of items from this catalog. A few items can be quoted below the quantity rates, when given. But in most cases those rates are about equal to usual wholesale prices. Upon inquiry we will quote prices on desired items if able.

Foreign orders. Our prices include prepaid delivery as far as our 8th postal zone. We can usually prepay to Mexico or Canada. It is best to include some extra on export orders. If too much, we add extra bulbs. The 100 rate prices do not apply on export orders unless customer pays transportation. Air mail is often advisable for export orders but expensive.

Canadian Customers. Apply to Sec. of Destructive Insect and Pest Act, Advisory Board, Ottawa, Ont. (or ask your P.M.) for Permit and mailing label and send these with your order.

Many **Latin American Countries** now have certain restrictions on importations. Usually it is only necessary to send us an official permit. Your postmaster can supply all information or tell you where to get it. Be sure to comply fully as we are not permitted to ship your order unless we comply with your law.

Errors. We make them but correct them, if notified at once.

Partial Shipments. If everything is not included in first shipment a slip so stating is enclosed. When final shipment is made, another slip so states. Check them with order and if short, notify us at once.

Guarantee. Our bulbs are true to name and healthy, but we do not guarantee results since we do not control the conditions under which they are grown. If, in your opinion, our bulbs are not up to our specifications, notify us at once. If you are not then satisfied with our explanation, they may be returned. No refund will be made if planted unless circumstances indicate bulbs were at fault.

Culture directions are in this catalog, hence none are sent with bulbs.

Catalogs. Spring Catalog, Jan. 15. Fall Catalog, Aug. 15. Names are dropped from our mailing list if you do not buy for two years. If not interested, please ask P.M. to return this catalog at our expense, thus saving paper, labor and postage.

Many persons apply for our catalogs only for the culture directions and buy their plants elsewhere. Recently we dropped 15,000 names who had received 4 or more catalogs each but had made no purchase. To send the 60,000 catalogs cost us about \$4,000. Postage alone cost \$600.00. This year we are dropping another 5,000. A large number have also been added. We hope you send us your orders. Henceforth we must revise mailing list every year. We need your business in order to send catalogs.

California Bulbs. Many persons ask us if our bulbs will do well in the east. We sell at least 50,000 each year to eastern and northern retail dealers. When you buy anywhere you are likely to get bulbs or plants grown in California, Michigan, Oregon, Washington, Florida or other distant states. All the above and others produce good bulbs that do well in your state.

Again we are asked if we can ship as far as, say, Indiana. Good Land O'Goshen, we ship safely to every state and to every continent. We ship exports almost every week. Often several shipments.

GENERAL CULTURAL DIRECTIONS

Rich, sandy loam is the best soil. Only a few, like Bearded Iris, prefer heavy soil. A very few, like Gloriosas, must have sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizers. We recommend only animal manures, compost and commercial fertilizers that are of organic origin such as Spoonit and others listed in this catalog for use on potted bulbs. In the outside garden fresh manure can be used on most plants, that are growing vigorously, as a very light mulch, but after flowering. Too much fertilizer before flower-

ing time may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruit. Your over-fertilized peach tree is likely to product no fruit.

Do not fertilize a plant in dry soil, or use any fertilizer (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Chemical fertilizers are like "patent" medicines. They are stimulating but often the final result is bad. The physical structure of soils is the most important thing. A well drained, friable soil is the best. Sand and humus can be added in sufficient quantities at least in flower beds and the humus can be added in fields by growing cover crops. For humus, add rotted manure, composted weeds, grasses and leaves, leaf mould or peat. It is seldom necessary to add any but organic materials to soils.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary to their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, Plantabs or Vigoro tabs which we list under Garden Supplies. They are less messy.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During the growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like Ranunculus. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect them from frost.

Pests. Snails, slugs, ants, mealy bugs, thrips, aphis, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled.

See our listing of **Insecticides under Garden Supplies**.

If you do much garden work and end the day too tired, you owe it to yourself to use our light weight plastic and indestructible garden hose. See the listing. It is the most economical of all.

Acid and Alkaline Soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like Gladiolus prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH 7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH.

I am told that Texas soils are sometimes too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

Potting Directions. Use clean pots of the right size, neither too large nor too small. A $2\frac{1}{2}$ " Amaryllis, for example, needs a 6" pot. A $1\frac{1}{2}$ " Eucharis needs a 5" pot. Small bulbs like Ranunculus or Achimines may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess water. Over this drainage material we usually place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely.

The best soil is a rich sandy loam with the addition of plenty of humus. For humus one can combine rotted leaf mould and old rotted dairy manure well broken up and rubbed thru a screen of smallest gauge. For most plants the proportion can be $\frac{2}{3}$ sandy loam, $\frac{1}{3}$ humus.

Fertilizers. Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. A potted dormant bulb, seed or plant must be babied to the extent of giving only a light diet. A rich, full meal will often cause failure. We prefer to get them well started and growing and of some size before adding more fertilizer, if any. The chief food of plants is carbon dioxide taken from the air thru the foliage. Water, nitrogen and minerals come from the soil.

When bulbs are well rooted, liquid fertilizer can be used once a month. Weak liquid manure is excellent but not quite as well balanced as Spoonit.

For the starting temperatures and further culture of the plants please read the culture advice given with the listings.

Sources of Further Information. Please note our **Garden Reference Books**. Join local garden clubs. Subscribe for as many garden magazines as you can. We especially recommend Popular Gardening, Dept. H, 90 State St., Albany, N. Y., and Flower Grower, Dept. H., 99 N. Broadway, Albany, N. Y. We are charter subscribers of both. I suggest you buy copies of each at your newsstand. You will probably then subscribe to both of them. These two magazines are devoted only to flower gardening—not to furniture, food, easy or luxurious living. Gardening lengthens life. Luxurious living shortens it. Take your choice.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedie of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone, this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs, or trees. Price \$37.50. This is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover.

Hortus Second (Bailey). A Concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedie of Hort. It contains only a few culture hints. Both works should be in every garden library. Price, \$7.50.

The above publications are subject to price changes, without notice, by the publishers. In the case that prices again rise on these or any books listed here we will notify the customer. The customer may then accept or cancel order.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. A most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price, \$3.00.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson, 238 pages. Price, \$3.00.

Begonias And How To Grow Them. Bessie Raymond Buxton. Invaluable in growing all Begonias, including the Tuberous. 161 pp., \$3.00.

American Orchid Culture. Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pp., \$6.00.

Greenhouse Gardening For Everyone. Ernest Chabot. Important factors are noted including correct temperatures for forcing plants, bulbs and orchids. 266 pp., \$4.00. If you have a greenhouse, this is a necessity.

Tuberous-Rooted Begonias and Their Culture. George Otten, veteran grower of Tuberous Begonias, with 60 years experience. An 88-page book, with 35 excellent illustrations. Price, \$2.00.

Tuberous Begonias, by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$2.75.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price, \$3.50.

How to Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price, 25c.

The African Violet, Saintpaulia. Helen Van Pelt Wilson. The first and still the best book on Saintpaulias. Revised and enlarged, by Helen Van Pelt Wilson. The revision includes all the better new varieties. Discusses all phases of culture and classification of types and varieties. Price, \$2.75.

How To Grow African Violets. By Carolyn Rector. A Sunset Book. 94-pages, paper-board covers. Illustrated. How to pollinate, hybridize, grow from seed or leaf cuttings, prepare soils, control pests and diseases, groom plants for show, etc., by a real grower. You should have both books. \$1.35.

The New Garden Encyclopedia. By a group of Horticultural Experts, edited by E. L. D. Seymour, a well known garden magazine editor and authority on gardening. This is a complete, practical guide for every detail of gardening. It gives pronunciations of plant name. 1380 pages, 10,000 articles, fully illustrated. Price, \$5.00.

Favorite Flowers in Color. Edited by Seymour. 634 pages of descriptions and 800 flowers are shown in full natural colors. Everything that flowers from trees, shrubs, to bulbs. One of the most beautifully illustrated flower books published. Price, \$5.95.

The books are cloth bound and printed on book paper. Postage prepaid. Add 5c for insurance to \$5.00. Sales tax 3% for California customers.

GARDEN SUPPLIES

In this price list, where an item requires "postage extra" you must send amount required with order. We are near Los Angeles, so just ask your P. O. what zone Los Angeles is in and postage required. You must add 1 lb. to weight of product to allow for weight of package and packing material. Thus if you order 1 lb. pkg. Snail-Kil Pellets send postage for 2 lb. If you do not send the postage we must ship by express and this is more expensive on small packages. Since postage cost is only 15c for 2 lbs. in zones 1-2 and 30c for zone 8 and likely to be \$1.00 by express, don't overlook this.

Snail-Kil Pellets. 1 lb., 45c, plus postage for 2 lbs. 2 lbs., 75c, plus postage for 3 lbs.

Ant-B-Gon. Set of 4 filled dispensers, 75c, plus postage for 1 lb. 4 oz. Refilling liquid, 40c postpaid.

Volc Oil Spray, for outside plants. Kills mealybugs, scale, red spider, etc. Don't use on orchids or saintpaulias, or most house plants, palm trees or ferns. Fine to clean up your shrubs, trees and most outside plants. 4 oz., 40c postpaid.

Hexotine. Will not burn tender foliage. Kills mites, mealybugs, thrips, red spider, aphis, young scale and most garden or greenhouse pests by contact and fumes. Avoid skin contact. Can be used to dip (but not soak) small plants like African Violets. 4 oz., \$1.00 postpaid.

Thrip-O-cide. For gladiolus thrips. Also good on other plants and for other pests. It is recommended to kill scale and other pests on orchids. 4 oz., \$1.15 postpaid.

We assume no responsibility for results with any insecticide.

Fertilizers. In the form of tablets, they are very easy to use. Merely push one down to soil level at side of pot. Price, 10 tablets for 10c with orders or alone for 22c, which includes postage and clerical costs.

Spoonit is the fertilizer we use and recommend for all greenhouse and house plants. Analysis shows 18% nitrogen, 18% phosphoric acid, 14% potash. To use, dissolve one level tablespoonful of the powder in a gallon of water. Apply once a month. Give small transplanted seedlings half strength, first time. Prices, 7 oz. can, 50c., plus postage on 1 lb. 24 oz. can, \$1.00, plus postage on 2 lbs. 4 lb. can, \$2.00, plus postage on 5 lbs. You will like it. Save money by buying 4 lbs. if you have many plants.

Canadian Peat. 10 lbs., \$1.00 f.o.b. express. By mail add postage on 12 lbs.

Sphagnum moss. Useful for lining wire baskets for growing many plants in baskets; when screened or broken up it may be added to sandy soil to increase acidity. We use it almost pure or with addition of peat and sandy loam for most acid loving plants. Price 65c per lb., add postage for your zone and 1 lb. extra for weight of carton.

Plastic Garden Hose. We believe our plastic hose is the lightest in weight, the strongest and longest lasting hose made. It is not damaged by sun or weather, being run over by auto or truck, by chemicals, nor does it rot like rubber hose. Light and easy to carry as 25 ft. weighs less than 3½ lbs. Price, 25 ft. length, \$5.50, plus postage on 4 lbs. 50 ft. length, \$10.75, plus postage on 7 lbs.

Wire Baskets. Our wire baskets are electrically welded, galvanized, non-rusting steel. The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price with hangers: 8", 95c, \$10.50 per doz.; 10", \$1.20 ea., \$12.75 per doz.; 16", \$2.75, \$25.00 per doz. Postpaid. Increased cost of postage, plus a carton makes necessary a slight increase in cost of one but not on doz. rate. Six may take doz. rate.

Snap On Pot Hangers, for hanging any size pot in tree, lath or green house. Galvanized, non-rusting steel. 45c ea., \$4.50 per dozen.

Baffle Spray Fogger. For greenhouse, lathhouse or outside. Fits ½" pipe. Adjustable, fog spray thrown 6 ft. increases humidity, lowers temperature. Useful cooling effect around poultry or rabbits, houses or plants. Price, \$1.36. If by mail add 10c.

Hose End Fogger. Coarse or fine spray. Useful for spraying orchids, tub. begonias, etc., and for damping greenhouse to increase humidity or as a movable fogger. \$1.50. Postage 10c extra.

Rootone. Dust seed, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. ½ oz. 50c, postpaid. 1 lb. can, \$5.00, plus postage for 6 lbs.

Vitamin B-1, 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

Supplies do not take quantity rates as applied to bulbs except as specified. They are also subject to price changes. Increasing costs of labor, materials, transportation, may result in price changes, tho we hope not. A good plan is to order early altho we expect no very serious increases. Don't forget Sales Tax in California.

POT PLANTS

Many bulbs, corms and tubers are most desirable for growing in pots as house or greenhouse plants. In the following pages, hundreds of varieties are listed and full directions are given for growing them. Many other plants like Billbergias, Anthuriums, Orchids, Marantas, Maricas and African Violets are favorite house plants and are listed although they are not "bulbs." We try to offer you the world's finest plants (including bulbs) for growing in pots.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. *genera*) is mentioned first. After it, the **species** (plu. also *species*) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for *Amaryllis* or *Agapanthus* depending on the genus last named in full. When a person's name in parentheses follows a plant's name, that person is the botanical authority for the name.

THE AMARYLLIS FAMILY — *Amaryllidaceae*

This Family includes the following bulbs, *Agapanthus* thru *The Alliae*.

The American Plant Life Society was founded in 1934 as **The American Amaryllis Society**. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening in interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton B. Traub of the U. S. Dept. of Agriculture, the greatest living authority on the *Amaryllidaceae*. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants.

Those who grow *Amaryllis* as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to Mr. E. Frederick Smith, Sec., Box 2398, Stanford, Calif., or you may include this membership fee with your bulb order to me.

The Society also publishes the following book, bound in manila paper.

Amaryllidaceae: Tribe Amarylleae, by Traub and Moldenka. 18 illustrations, 194 pages. \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "*The Amaryllideae*," in 1888.

Amaryllid nomenclature. Carl Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, *Epidendrums*, and under the genus *Amaryllis* he included certain *Crinums*, *Zephyranthes*, *Sprekelias*, *Brunsvigias*, *Nerines*, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classifications and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in *Herbertia*. These have been approved by "*Gentes Herbarum*," the publication of the Bailey Hortorium of Cornell University. To help you avoid ordering a bulb you already have we give both old and new names, thus: *Brunsvigia rosea* (*Amaryllis belladonna*); *Amaryllis advena*, (*Hippeastrum advenum*).

Agapanthus. Since the best time to move them is in the early spring we refer you at present to our spring 1952 catalog when received or if wanted now refer to Spring 1951 catalog. Send 10c for the latter.

Alstroemeria (pronounced-stre, not-stro). The Peruvian Lily. Many showy flowers in an umbel on long, slender, stiff stems. The pastel tones are rich and varied, long lasting and popular as cut flowers.

Culture. They must have good underdrainage and therefore if possible, sandy soil. In heavy soil, their cultivation is made possible by the plentiful addition of sand and leaf mould. They need about 60% to 75% of full sun exposure. Natives of Semi-tropical America, they have been grown as far north as New Jersey in the garden. This has been possible by planting large tubers about 5" or 6" deep and given a heavy mulch. There is some danger of freezing and consequent loss in the north the first two winters. By

that time they have usually deepened themselves below the depth of frost penetration. We cannot guarantee against loss by freezing, but we offer rather large tubers that will help.

Assorted varieties. Large tubers, 50c ea., \$4.00 per doz. Order early.

Alstroemeria seed are about the size of radish seed and are as easy to grow. We saved a few from mixed colors and varieties. Price, 15 seed for 30c. 30 seed for 50c.

Amarcrinum Howardii (*Crinodonna Howardi* is the better name.) A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. It is a fall bloomer and should be ordered early. If not, it may skip blooming the present season. Invaluable as a pot plant or in outside garden in the south. \$2.50 each. Larger bulbs, \$4.00 each.

Amaryllis Linn. This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular. To the word "Hippeastrum," literally translated "horse star," we can now say "horse feathers" and forget the word.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they should be planted about an inch below frost penetration, in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids" and don't plant over about 6" deep to top of bulb. 4" deep is better.

We do not advise you to plant imported or greenhouse grown bulbs in the outside garden. They seldom last more than a year or two. These high-bred "hybrids" have been bred for the perfection of the flowers. Little or no attention has been given to sturdiness and vigor. They can be shifted to the garden for summer growth but they must be given special attention, watered frequently and fertilized carefully. Take them inside for the winter.

In Pots. A bulb 3" or less in diam. needs a 7" pot, and larger bulbs need larger pots. It is better to pot in Nov. or Dec. Better blooms result. But one can pot them as late as March and it is better late than never. The early potted bulbs will start more easily and give better flowers, but in either case the flowers will be better and will show more fully their full quality the second year.

The best potting soil is a rich sandy loam. If not sandy use a friable loam and add sand. To this add an equal quantity of well screened and well rotted dairy manure and leaf mould. Use no fresh or partially decayed manure. The use of peat or sphagnum of a very low pH should be moderate as Amaryllis do not like a too acid soil. Seedlings grow well in soil mixture containing sphagnum well broken up by rubbing. Many seedlings like more acidity than mature plants because they germinate in nature on or near the soil surface where humus is more abundant than at a depth to which roots of mature plants penetrate. For the large bulbs one tablespoonful of bone meal to each pot is recommended. Mix all ingredients thoroly.

In potting the bulbs, carefully preserve any living roots, even remnants. Clean but do not scrape the base of the bulb and dust the moistened surface of base and the roots with Rootone. If there are no roots, coat base of bulb with Rootone, which will hasten their formation.

Pot the bulb two-thirds above surface and water enough to settle soil. After this keep the soil only slightly moist until growth starts, then gradually increase. When first potted set them in a cool, light room but not in sunlight. the best temperature now is not over 50°. The bulbs must have sufficient time to form a good root system under these conditions. If placed in a warm room and exposed to the sun, top growth will be made before roots, and the result may be poor flowers or none.

When you are sure that roots have formed, but not before, water the plants as di-

rected with (or without) Vit. B-1. But be sure to leave the bulbs a sufficient length of time in a cool room. They need this period of dormancy and sufficient time to make a good root system. Many fail because they try to force bulbs before they have rested and have made good roots. If you get a poor flower it may be because the bulb had no roots and had only the sustenance stored in the bulb from which to make flowers. Lack of a good root system to nourish the flower will affect the quality of the flower in every way —size, substance and even color. So, don't remove pots from the cool room too soon. Wait until they demand it by top growth. Then bring the pots by easy stages to a temperature of 60°, then about 65°. Day time temp. should never be much over 70° for best blooming.

After flowering the bulb has shrunk and a long period of growth is necessary. If good growth is made at this important stage, the bulb will become much larger and offsets may be made. Keep them growing as long as possible. When the weather is warm outside the pots may be plunged in the garden. If rim of pot is sufficiently below soil surface the roots may emerge and add range to the root system. Or better still, shift the bulb and the unbroken lump of soil to the garden. Water liberally during growth.

Self colors are most desirable to go along with stripes or other markings. Self reds, scarlets and pure whites are expensive. There are a few self colors in our Select Strains but they are not separately identified. Don't order selfs or any color not listed. Pollinate your best flowers, plant seed and you will likely produce a few selfs. Save and grow their seed for still better ones.

There is no quantity discounts on Amaryllis except as specified in the listing.

Amaryllis advena. Oxblood Lily. 5 to 8 ox-blood red flowers in an umbel, on a 10" slender scape, preceding foliage. Fall bloomer. **Culture.** Not suitable for pot culture, but so nearly hardy that in mild sections of north it will succeed. In Michigan, in the section where peaches are grown, this Amaryllis has been grown commercially. It may be planted 6" deep or more, and mulched, in a protected situation. Full sun exposure, heavy or medium loam soil is good but does well in lighter soils also. Order before September 15 if possible, or you may miss first year flowers. 60c ea. \$5.00 doz.

A. ambigua. The flowers have a long tube, like a lily. There are 5 or more on a very tall scape. The exquisite, spicy fragrance perfumes the entire garden. Customers report success with pot culture. Hardy in south. The bulb may be covered by 4" of soil. \$2.50.

A. immaculata. Usually known as A. candida. The long, tubular, lily-shaped flowers are pure white. Deliciously fragrant. \$4.00.

A. psitticina. Species from S. Brazil. Large bulb and plant. The large flowers are green tinted with carmine lines radiating to the carmine edge of petals. The effect is of a very pretty red and green Amaryllis. But the green here is attractive. Here this species flowers in winter and is a free bloomer. When well established in a pot this species will have foliage thru the winter. A cool house or room is best. Valuable in raising hybrids when seeking winter bloomers. \$7.50 each. Monster bulbs, \$10.00.

Amaryllis hybrids. In addition to the four species listed above, we offer the best field grown American strains. These include Howard and Smith, my own and other hybrids. We call them the Select Strains. These field grown bulbs are much easier to grow than imported greenhouse grown bulbs. In order to produce the high quality Amaryllis, selected bulbs are grown in the greenhouse for one season. The flowers are hand pollinated. Thus there is more certainty of high quality than from seed collected at random in the field.

Color Classes. These are named from the parents. When they first bloom, off colors are removed or "rogued" out. They are again rogued the second year. Nevertheless, the color classes are only approximately correct. Many off colors are missed when rogueing. There is also a wide difference in opinion as to color. One calls a flower pink. Others may call it rose. Therefore, we do not guarantee the color but we do exchange them if the customer is not satisfied. Seldom, however, is a customer willing to part with a bulb of this strain, even tho it be an off color. The following color classes are as selected and named by the originator. When you get a wrong color and do not wish to keep it, notify us at once and await instructions.

Select Strains, Assorted Colors. 2½" diam., up. 90c ea., 3 for \$2.50. \$9.00 doz.

Select Strains, Near White. These have less color markings than the White Background. When their seed is planted, we have found a few pure whites of high quality and usually larger than the pure whites that we have imported. The color markings are variable. Some are very close to pure white and none have heavy markings. $2\frac{1}{2}$ " up, \$3.00. Three for \$8.00.

Select Strains, Crimson Shades, $2\frac{1}{2}$ " up, \$1.00, 3 for \$2.75. \$10.00 per doz.

Select Strains, Red Shades, $2\frac{1}{2}$ " up, \$1.00, 3 for \$2.75. \$10.00 per doz.

Select Strains, Scarlet Shades, $2\frac{1}{2}$ " up, \$1.00, 3 for \$2.75. \$10.00 per doz.

Select Strains, White Background. We have marked about 100 large bulbs in our field that are this color. The general effect is of a white flower but all have markings in variable degree. These are larger bulbs than the above and will usually give 2 or 3 scapes of flowers. 3"- $3\frac{1}{4}$ " diam., \$2.25; 3 for \$6.50. $3\frac{1}{4}$ " diam. up, \$3.00.

Select Strains, Assorted Colors, large sizes, $3\frac{1}{4}$ ", \$1.45, 3 for \$4.10. $3\frac{1}{4}$ " up, \$2.00 each.

Houdyshel's Hardy Hybrids. These are not hardy outdoors in the colder northern states but as far north as North Carolina, Washington, D. C., Oklahoma and even So. Kansas these have proven winter hardy if covered by 4" or 5" of soil and given a good winter mulch of straw. Possibly with a pile of brush above the straw they might be wintered in the garden farther north.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors in Feb. and March will be most welcome. Price 75c ea. \$7.50 per doz. \$50.00 per 100, prepaid.

Amaryllis Seed. We have very few seed this year. This is being used to fill advance orders at last years price. There will be very little left over and for that our price will be 25 seeds for 60c. Only 25 to a customer.

Plant seed as soon as received in good sandy loam soil rich in humus. If not much humus, add a good portion of fine leaf mould. Seed may be just touching on edges. Cover with $\frac{1}{2}$ " soil. If in pots and soil is wet, cover with a pane of glass and they are likely to come up before soil becomes dry. Keep seedlings in house or greenhouse the first 2 or 3 winters so that they can grow all winter. If this is done, they usually begin to flower in 2 or 3 years. They can be transplanted at any time to give more growing space.

Brunsvigia rosea (Sym. Amaryllis belladonna, Aitson). Familiar in Calif. and the south as Amaryllis belladonna, Naked Lady Lily, etc. It is hardy where minimum winter temperatures are about 10° above zero. It will be safe to plant it on the east coast to N. Car. and to Washington, D. C.; thruout the south where winters are mild; on the Pacific Coast to Vancouver. They do not always succeed in pots. We have had reports of good growth but no flowers in Fla., Miss. and La. Customers should always report to us the success or failure of such bulbs so that we may know where they may be grown successfully and where they may not. This So. African does well where there is no rainfall from May 1 to Aug. 1, as here or in its habitat. If that is a wet season for you, you may have to hold an umbrella over them, or try shifting to pots and place under a roof until Aug. 1. We can't guarantee flowers or success. But the flowers are an exquisite pink with a fine fragrance. Aug. and Sept. visitors to So. Calif. take back home the memory of these and want them. But maybe you can't have them. If I could have a few hundred reports I might be able to tell you.

Brunsvigia rosea major. Earliest to flower, late July to Sept. 15. S. 35c. M. 50c ea.

B. rosea, "Covina Hybrids," from a Covina garden. Several fine colors, assorted. L. \$1.00. M. 75c. S. 50c.

B. rosea, var. Parkeri. This is a larger flowered and deeper rose form. A great improvement on the type form. Special price, \$1.50 ea.

B. rosea, var. Hathor. This is a pure white Belladonna Lily and is very rare and most beautiful. Price, \$5.00 per bulb. Everyone who loves the "Belladonna Lilies" and can grow them, should have this white one. Therefore we will sell a few small bulbs for \$2.50 ea.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 8" for a small plant up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground, will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open flowers of soft yellow orange. Hardiest. \$2.75.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardiness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. We lost so many of this type in the freeze of Jan. '49, in a lath house, while those outside under trees were undamaged, that we are discontinuing the lath house culture and are closing out these plants. Those not killed have recovered fully from the freeze damage. We have probably 50 that are about blooming size. Price \$3.00 ea. Very small plants for as low as 50c. Others 75c, \$1.00, \$1.50 and \$2.00. You will be surprised by their rapid growth in pots, under good culture.

C. nobilis hybrids. As shown by their wider and less tapering foliage, by their darker orange flowers, these probably have the species Nobilis in their ancestry. They do not, however, have the curved perianth of Nobilis and the flowers are almost as wide open and flat as miniata. They have the largest flowers and the finest colors in Clivias. Blooming sizes, \$5.00 and \$6.00.

Daffodils and **Narcissus** belong to the genus *Narcissus* of the Amaryllis Family.

Culture. All Daffodils except the Polyanthus *Narcissus* are hardy both in the mild climate of the south as well as in the colder northern states. In the north especially it is best to plant the bulbs rather deep where the frost does not reach. Six inches is about right. Smaller bulbs may go more shallow and be mulched. In California too and all the south there is an advantage in deep planting. Plant September to November.

Sandy loam is the best soil, but any good rich garden soil will do. Use no fresh manure. For us, they seem to do better in the partial shade of trees altho many are grown in full sun.

Trumpet Daffodils do not succeed well in the tropics. They should not be planted in So. Florida. Polyanthus *Narcissus* are too tender for the north but are said to do well as far north as S. Carolina on the Atlantic Coast. But in the north they are fine pot plants and often flower before Jan. 1.

King Alfred, the most popular of Trumpet Daffodils. The large flowers are of deepest golden yellow. The large, frilled trumpet adds to the beauty of the flower. We can sell you a dozen bulbs this year, medium sized rounds, for less than you would pay your florist for a dozen flowers next spring. 15c ea., \$1.40 per doz. Per 100, \$8.00 by express, f.o.b.

We have a small stock only of the following varieties, which we have been growing on a couple of years. We do not have enough labor and must close them out at a bargain price.

Aerolite, L. **Alaska**. **Alasnam**, L. **Ben Hur**. **Dawson City**, L. **Dick Wellband**. **Diotima**. **Fortune**, L. **Hector Treub**. **John Evelyn**. **Winter Gold**.

The above are much scarcer than King Alfred and sell for from 30c to 50c ea. We have only small bulbs and offsets for most of them but if the name is followed by L we have large, double nose bulbs. Prices, L. 20c ea. Blooming size or small round, 10c ea. Offsets for propagating, mostly flower second year, 5c ea. Six will be sold at our usual dozen rate, if all one variety.

Specifications. If the variety or size you order is sold out we reserve the right to substitute other sizes to equal value or another variety. Name some preferred substitutes, but do not order unless you will accept substitution if necessary. Since stock is small, please order early.

Eucharis amazonica (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S. A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel, with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

Culture. It is recommended that bulbs be potted in coarse, fibrous loam with coarse sand, granular charcoal, a tablespoonful of bone meal, peat and a little rotted, fine cow manure. Because they need abundance of water when blooming, the drainage must be perfect. Use 5" pot. Feed with Spoonit or manure water except when resting, shaded but plenty of light and some sun is needed to develop flowers. Frequently they flower very soon after potting. If they do not, induce good growth for several months until offsets appear and pot is well filled. Then dry them off, giving only enough water to prevent entire loss of foliage. After a few weeks rest, water once or twice. If they do not flower the rest was not long enough or the growth before was not sufficient. From 2 to 4 crops a year may be had. They are tropical plants and 65° is the best minimum night temperature. We offer the best and largest imported bulbs we can get for \$1.50 and \$2.00.

Haemanthus. The Blood Lilies of South Africa. So rare that few have seen them.

Culture. Hardy only in almost frost free climate like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be very sandy and contain a good proportion of leaf mould or peat as they are shade plants and like mildly acid soils.

H. albiflos should be potted with half of the bulb above surface. The others covered to top of bulb. When growing, they should be kept moist, not soggy and never become dry.

Haemanthus produce red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this every few days as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf.

Collecting and growing Haemanthus is a most interesting, useful and even profitable hobby.

Haemanthus albiflos, type var. 2-4 leaves, erect. Umbel of 100 or more small white fls. in fall. Evergreen. \$3.00.

H. albiflos, var. **brachyphyllus**. Shorter, broader leaves, ciliated on edges. Prettier flowers on shorter scape. A more attractive pot plant, but very rare. \$10.00.

H. carneus. A small species that is winter growing like *coccineus*. Flowers are pink to flesh colored in an umbel on a 6" to 8" stem. They begin in early July and some flower as late as last of Aug. Two short, prostate leaves follow the flowers. It is doubtful if bulbs we send after you receive fall catalog will still flower, but we will include the seed if not too late. \$2.50.

H. coccineus. The true Blood Lily, altho all *Haemanthus* are known as Blood Lilies. The umbel of scarlet or blood-red flowers come in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Good flowering size, \$3.00. Extra large that should give many more flowers and seed, \$4.00. Order early. They are usually thru flowering, even in storage by Sept. 15 to 30.

H. Katherinae has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in diam., often there are 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 10" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Our stock is limited and we list now in order that you may order early. No bulbs are reserved without prepayment. Good flowering size, \$5.00. Largest size with several offset, small bulbs attached, \$7.50.

At present we can offer no bulbs of *Multiflorus*, *Natalensis* or *Puniceus*.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and replanted. All that you must do for them is keep the weeds down and water. A heavy leafy mulch helps every way.

In Daylilies, the sepals are colored and petal-like and are an essential part of the floral display. Best planting time is fall, winter or spring. They can be planted in summer also.

In the following list those plants known to be evergreen here are marked E. These often flower here in winter.

Hemerocallis Araby. 30". E. A lovely pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

H. Bijou. 24". June-July. Orange, overcast with rich fulvous red. 50c.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

H. Chengtu. E. Brilliant coppery orange-red with carmine mid-zone. 3 ft. July-Sept. 50c.

H. Cinnabar. E. Cinnamon sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

H. Crown Prince. E. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

H. Dauntless. E. Cadmium yellow. Fulvous red blended in mid-zones. Pastel effect. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 75c.

H. Florham. E. Still popular old hybrid. Large, golden yellow. May-July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

H. Iris Perry. E. 36". July-Sept. Orange-bronze. 50c.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

H. Mandarin. E. 48". Lemon yellow. June-July. 50c.

H. Margaret Perry. E. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

H. Mikado. E. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 35c.

H. Nubiana. E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 60c.

H. Radiant. Rich orange. 42". June-July. 50c.

H. Rosita. E. Near carmine-crimson with coppery red tone. 36". Part shade preferred. \$1.00.

H. Serenade. Rose-fulvous markings on apricot cream. Faintly overcast darker. 4 ft. June-July. 75c.

H. Sibyl. E. Dark purple-red petals, lighter sepals. \$2.00.

H. Soudan. Lemon yellow. Broad wavy petals and sepals. 3 ft. June-July. 50c.

H. Vesta. E. Deep orange with glistening gold sheen. 30". May-July. 50c.

H. Vulcan. E. Dark maroon-red. 30". July-Aug. 75c.

H. Wau Bun. Large apricot flowers, sprinkled fulvous red. The twisted and curved petals add to its beauty. 75c.

Lycoris are natives of Japan and China. They are among our very best bulbs for the south and two at least, *L. squamigera* and *L. Sprengerii*, are quite hardy in the north. This is because the bulbs remain dormant until very late winter or early spring when the foliage appears, makes rapid growth and dies back by early summer. Most other species are winter growers and that eliminates them for northern gardens. Cover the bulbs by about 4" of soil in full sun exposure. Leaf mould or peat added to soil is a help. *Lycoris* are recommended by many for pot culture. If one gives them a very cool room—not a "hot house"—they should succeed. Imitate Calif. winter climate, where temperatures in winter range from 32° to 60°. Most of them are hardy to Washington, D. C., and even in So. Kansas a few are grown in protected places. The *Lycoris* species are all most desirable. All flower in the fall before foliage comes. Plant 4" to 5" deep.

Lycoris Aurea, Golden Spider Lily and Hurricane Lily are common names. It is one of the most beautiful of all bulbous plants. The Golden flowers are exquisite. We were able to get bulbs of aurea and alba from Japan this fall and can reduce our former prices. Every garden in the deep south of any pretension should now have them and in the north, try potting them. The bulbs were graded by the grower as 5" to 6" circumference, or 1½" to nearly 2" diam., \$1.50 ea., or \$14.00 per doz. This makes cost only \$1.17 ea., for 6 or more.

L. alba. This is a white one. The name is not a valid one and we expect that it may be either the white form of *L. radiata*, *L. incarnata*, *L. albiflora* or another. In any case it is worth trying and I hope to identify it and announce the correct name later. 4"-5" cir. \$1.50 ea. 6 for \$7.00.

L. radiata. Red Spider Lily. Often called the Guernsey Lily. Many coral red fls. in an umbel, in Sept. The long stamens and long narrow undulated petals account for the spidery appearance. This is one of the south's most outstanding garden bulbs. 35c and 50c.

L. Sprengerii. We formerly listed this as *L. purpurea* but it has recently been identi-

fied as Sprengeri. The flowers are rose, purple and carmine and the outer third of the petals are in stunning contrast, a vivid Prussian blue. Fortunately this is quite hardy in the north as it is without winter foliage there. \$3.00.

Collection. One of each of the Lycoris, listed for \$6.50. Price \$5.50.

Nerine. This genus is seldom seen in America, altho it is one of the most beautiful and varied of the Amaryllids. They bloom in succession from Aug. 1 thru January. They are hardy only in the south where temperatures seldom go under 26°. But they are one of the finest pot bulbs. **Culture.** Pot or plant in mildly acid to neutral, sandy soil. Use peat or leaf mould to bring soil to pH 6.5 or 7. Alkaline soil is the most frequent cause of failure. Pot bulbs at once with bulb well covered and 2" to 4" deep in gardens. Full sun. When foliage yellows withhold water.

Nerine Bowdenii. 10 or more flowers in an umbel 9" wide on a 15" scape. One of the finest Nerines and very easy. 75c and \$1.25.

Nerine Fothergilli. The flowers are a rich red or scarlet that is iridescent in a way to remind one of polished gold stone. This and the following hybrid bloom in late summer or early fall just preceding the appearance of foliage. This follows a summer dormant period when they should be kept dry. The two varieties are ideal for potting and do not need to be repotted for several years. In pots cover the bulbs only to the neck. Keep bulbs growing at a cool temperature all winter and spring until foliage yellows. \$2.50 ea.

N. Fothergilli hybrids. Much like the parent but colors are from salmon orange to shades of red. No choice of shades possible. These like their seed parent, N. Forthergilli, should be kept dry in summer when dormant. Water in Sept. \$2.00.

N. rosea-crispa. Hybrid of Filifolia but larger in all parts. Can be kept evergreen or dried off. \$1.00 ea.

Assorted varieties, 3 bulbs for \$1.00.

Pancratium maritimum. Because flowers resemble Ismene this is sometimes called Peruvian Daffodil, the common name for Ismene. The flowers have a daffodil-like cup, pure white and very fragrant. Evergreen foliage. A writer in Sunset Magazine recently referred to this species as the "Sea Daffodil." Can be moved any time. Hardy only in south. 50c ea.

Sprekelia formosissima superba. Orchid amaryllis. Deep crimson flowers in orchid-like form. Much larger than common type, better color, more flowers. Evergreen. Fine in pots. Culture like Amaryllis. 75c.

Tulbaghia violacea. Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz.

T. fragrans. This species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It has larger fragrant flowers than violacea, in the same color. Evergreen. \$2.00.

The Alliae, or onions, are now included in the Amaryllis Family. The following Alliums are useful as foods as well as ornamental. Culture simple.

Allium schoenoprasum. True Chives. Small clumps, 10c, 3 for 25c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c.

A. ampeloprasum. Spanish Garlic or Burbank's Garlic. This is the largest, sweetest, juiciest garlic and the easiest to peel. It has a 30" flower scape with a large round umbel of white flowers. An ornament in the herb garden. Rapid multiplier. 10c ea.

Brodiaea uniflora. Lovely porcelain blue flowers on a low plant. Usually grown in pots in north but a customer reported them hardy in Ohio. 6 bulbs in a 4" pot will go well with Oxalis in your kitchen window garden. Must have a cool room. 25c doz.

BULBS AND PLANTS AS PRESENTS

Any time a present is needed, why compete with shopping crowds until you are so worn out that you cannot decide on what to get and finally make a purchase that you

are very doubtful about. Selecting one present often spoils an entire afternoon. Nearly all your friends love flowers and are sure to appreciate a gift of bulbs, an orchid, Anthurium or an African Violet. The last named are already one of the most desired gifts and very frequently used. Just sit down in your most comfortable chair, our catalog in hand. Select the present at the price you wish to pay and mail us the order to be sent to you or direct to your friend. There is no tired, impatient salesman at hand to hasten your decision. You will enjoy it more than down-town shopping.

IRIS FAMILY — Iridaceae

The Iris is the type genus of this family, which includes Iris, Gladiolus, Watsonias, Freesias, Sparaxis, Tritonias, Babianas, etc.

Tall Bearded Iris. A garden is not complete without a good collection of Bearded Iris. These can be planted until late into the fall, but the earlier you plant the more flowers you will get next spring.

Our "1951 Iris 400, Price List," lists nearly 250 of the newest and best. It omits only the newest introductions of 2 or 3 years past that still sell for very high prices. But it includes the best in the range from 25c to \$6.00 ea. The culture information is valuable as it tells you how to grow them and how to get a profusion of flowers every year. In order to make this available to everyone, whether they wish to buy or merely want the culture information, we charge a dime for it. If you order in 1951, deduct the dime but don't ask for a free copy. The clerical costs and postage, printing, etc., exceeds the dime, which you pay to get it. Lest you expect more, I will explain, this is a folded sheet of paper, 9" x 18", printed on both sides, no illustrations.

Dutch Iris. These are bulbous Iris. The flowers are not fragile like Bearded Iris and are therefore useful florists flowers.

Culture. Try to plant before Oct. 30, if possible, as late plantings will not do quite so well. The bulbs should not be out of the ground too long. Plant 1" to 3" apart and 3" or 4" deep, depending on size. Sandy soil with leaf mould is preferred. Full sun or slight shade. Hardy in milder sections of the north but a winter mulch is advised. They can be grown in pots, in a cool room.

Some varieties do not make large bulbs, hence no size is specified. Ours were rather crowded this year and did not reach maximum size, but all will flower.

It is not possible under present conditions to get enough labor. We have decided to quit growing a number of items and this is one of them. We are reducing our prices to a level that is sure to sell them all and I advise early orders.

Yellow Queen. Pure deep gold. 3 for 20c. 60c doz.

Assorted colors. 3 for 25c. 70c doz.

Planting Stock. Small offsets of assorted varieties. A few may flower, but doubtful. All should flower second year. 25c doz. \$1.50 per 100.

I. reticulata. This bulbous iris is the daintiest, smallest and most fragrant of all iris. The flowers are bright violet blue and the perfume is that of violets. In pots, planted early, they bloom by Christmas. What more can one want? There is more. They are hardy. Our bulbs were grown in Mich. They are very desirable where small plants are wanted for borders, beds or rock garden. There is still more in their favor, the price. Formerly, they have sold as high as 35c ea. This year I can offer the top size, 6 for 60c, or \$1.00 doz.

Culture. They prefer a sandy soil, rich in humus. Add leaf mould or a little peat for the humus. In pots, be sure of good drainage. For Christmas bloom pot early, at least by late Oct. give them about 3 weeks in a cool room and not watered too heavily. Then bring to a warmer room with plenty light and some sun. Keep slightly moist until top growth shows then water more freely, and in winter, full sun exposure. Plant 12 in a 6" pan or pot and 6 in a 4" pot. Shift to garden in early spring.

Iris spuria. 3 to 4 ft. tall. Very attractive in the garden and excellent for cutting.

They are standard florists flowers, used in arrangements or bouquets and individual flowers make fine corsages. **Culture.** Keep them moist after planting and at all times. They do best in part shade and plentiful moisture even that of a stream side. But they respond well to field culture and drier conditions. This species and the two which follow grow from rhizomes and require shallow planting.

Iris spuris aurea. Pure golden yellow. 40c ea.

I. spuria ochroleuca. White, with yellow patch on falls. Our type of this is a superior one. 35c ea.

Wholesale. If you wish to plant in quantity we will send 100 by express, f.o.b., either var. for \$10.00.

I. Douglasiana. This one is violet blue. It is for the south only, tho it may be hardy up to Okla. and Va. Does well in part shade. 75c.

I. unguicularis, (I. stylosa). Lilac flowers in the winter. For shade, under trees. Hardy to N. C. on east coast. Order only in early fall and water well to start. Evergreen. 35c ea. \$3.00 per doz.

Marica gracilis. Walking Iris or Apostle Plant. The fugitive 2" flowers, white and blue with yellow and brown markings in center, are lovely. The flowers are followed by a small plant at end of leaf-like scape. These become heavy and bend over to ground and take root, thus walking away from mother plant. **Culture:** give nearly full shade, plenty of water, never drying out. Tender tropical but grown in pots in north. 75c ea. Delivery any time.

M. hybrids, Northiana x Gracilis. In the spring of '48, I crossed these two species. The seed were planted in the greenhouse the following winter. These seedlings began to flower in '50 and again flowered in '51. They are rather similar and appear better than either parent. They have larger flowers than Gracilis, wider, more rounded petals and more flowers than either parent. Apparently they bloom with Gracilis and a little later with Northiana. They are certainly profuse bloomers tho actual value of plants and whether worthy of being introduced under separate names has not been determined. Price \$2.50 ea.

Moraea polystachia. African representative of the Irises. 2 ft. stems, covered by a multitude of flowers, mauve and violet with yellow in throat. Blooms profusely in the winter in California or in pots in the north. **Culture:** like freesias. These are very scarce this year, thus higher in price, but you can plant one or a few and raise a lot from the freely produced seed. To see these flowering in winter is to want them. 25c ea.

How to Grow Freesias, Sparaxis, Ixias and Tritonias. This closely related group of bulbs have similar culture requirements. All are hardy only in the south where winter temperatures go no lower than about 26°. At about that temperature some injury results but bulbs survive. They mature if even several degrees colder. Where temperatures are colder they may be grown in cold frames, cloth house or unheated houses.

In the north, all are fine bulbs for pots in a cool room in the house or greenhouse. As they are naturally winter growers, they must have cool conditions and they do not flower well when forced at a temperature range of much above 40° to 60°.

They should be grown in flats 4" deep or in bulb pots or pans. A friable sandy loam with much leaf mould added is the best soil. If part of the humus is from composted, well rotted manure, better flowers result. Plant 6 to 8 bulbs in a 5" to 7" pot and cover lightly.

In the outside garden, bulbs may be planted 2" to 3" deep and 10 to 20 to the foot, according to size. Give full sun exposure. Plant or pot early. October is the best month. Good results follow Nov. planting and Dec. planted bulbs usually flower well but stems are shorter and flowers are usually a little smaller.

Freesias are the most deliciously fragrant flowers one can grow. The fragrance is not too heavy and is not cloying in the house or outside.

We offer forcing size bulbs, $\frac{5}{8}$ to $\frac{3}{4}$ " diam., as they give longer stems and more flowers either in pots or outside garden. The assorted varieties at exactly one half of last year's price are equally good.

Tecolote hybrid Freesias, assorted and well blended, 2 for 15c. 65c doz.

Sparaxis are closely related, more colorful, mostly red shades, not fragrant. 3 for 20c, 70c doz.

Ixias are 15" to 24" tall, have slender, wiry stems, nice for cutting. Flowers close at night and on dark days but the pink striped, long buds are even more attractive. Large forcing size, 3 for 25c, 90c doz. Small sizes that flower well outdoors, 40c doz.

Tritonia lineata. Grows to 18". White crossed by grey lines. 3 for 15c. 50c doz.

GLADIOLUS

How to Grow Gladiolus. Glads planted before Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the East) are reasonably sure to escape the attack of thrips.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with D.D.T. or 5% Chlordane. If you prefer to spray, a very effective liquid spray containing D.D.T., is Thripocide, offered under Garden Supplies. This spray is made especially for control of Gladiolus thrips and is easy to use in a hand sprayer. It is equally effective on other plants and for other pests.

Dust or spray glads when 6" tall. Before flowering treat them about 4 times. Treat stored bulbs to kill thrips that may be on them. All insecticides are poisonous. Observe the precautions on the package.

Bulbs purchased from us have been treated and are free of thrips.

Ballad. Ruffled light rose, salmon tints. Late. L. 8c.

Barkarole. Clear, light orange, ruffled. L. 8c.

Birch Red. Best new deep red. L. 45c.

Burma. Heavily ruffled, deep rose red. L. 8c.

Capeheart. Early, salmon rose. L. 6c.

Chamouny. Beautiful bright rose with silver edge. L. 8c.

Elizabeth The Queen. Everyone loves this deeply ruffled lavender. The most beautiful Gladiolus. L. 12c.

Ethel Cave Cole. Florists favorite pink. Tall. Large fls. L. 6c.

Gold Dust. Very early, clear yellow. L. 8c.

Huntress. Very early, ruffled lavender. L. 15c.

Irak. A most unusual color, wood-smoke grey. 10c.

Leading Lady. Largest, finest white. Cream tint. Highest record for First Prize or Grand Champion show awards of any modern glad. 15c.

Los Angeles. A once favorite cut flower but now too small to compete with later originations, but it produces so many side branches that it becomes almost a "bush" and we have seen as many as 100 flowers from one bulb and therefore is a good landscape variety. It grows well in cold weather and is a good forcer. It should grow well in a 10" pot in a sunny place. L. 6c.

Miss Wisconsin. Best medium rose. A florists favorite. L. 15c.

Mother Kadel. Fine medium yellow. L. 8c.

Ogarita. Salmon fls. Very tall, always straight stems. Vigorous. L. 8c.

Oregon Gold. Medium yellow, darker in center. Ruffled. Very tall with very large fls. L. 10c.

Pacifica. Early, tall, large white. Fine for cutting. L. 7c.

Red Charm. The favorite florists red. L. 8c.

Red Unknown. Correct name unknown but a fine early red. L. 7c.

Snow Princess. A very fine white and early. L. 7c.

Spic and Span. Ruffled, deep pink that is coming to the front as a commercial. L. 20c.

Mixed Varieties. We are placing a larger number of varieties in our mixture this year as we must reduce our growing area because of labor shortage. These are 1" and up. 5c ea., 50c doz., \$3.50 per 100. Mixed Bulblets, \$1.00 per pint.

Gladiolus Nanus. Baby Glads. In the deep south these are winter or very early spring growers and flower long before the large type. The small, exquisite flowers are most desirable for bouquets or any florists' use. Altho higher in price, they multiply rapidly and one can soon have a good stock. They may also be grown from seed and may be crossed to produce new sorts. In the north they may be grown in pots in a cool room in plenty of sunlight. 18" to 30" tall. In the south they may be planted in Nov. or later. In mild sections of the north, plant in very early spring but buy your bulbs in the fall and store at 40°. They do well in pots and are easy to force. 4 or 5 can go in a 6" pot.

G. byzantinus. A species. We have been listing this as Foster's Purple because Mrs. Foster, long ago, grew it near here. A Dutch grower classified it as listed here. It is a vivid purple and a winter grower here but best of all, customers report that it is hardy in the north and does not have to be dug in the fall. 35c ea. \$3.00 per doz.

Charm. Fine rosy lavender. 25c ea.

The Bride. Pure white. 30c ea.

LILY FAMILY — Liliaceae

Many call all bulbs lilies, an error. Included in the Lilaceae are Hyacinths, Tulips, Muscari, Ornithogalum, Veltheimia, Scillas, etc.

Lilium. This genus includes all true lilies. **Culture.** It is better to plant all true lilies in the fall altho certain types may be planted in spring. Plant 4" to 6" deep (deeper probably in north) in mildly acid soil. Sandy soil is best and all soils for lilies should have addition of much humus—leaf mould, peat. Planted among low shrubs, where tops may reach up into the sunlight, with their feet cool and their heads warm, they are ideally situated. They do well in the half shade of trees or a lath house.

Altho the Lily is one of the most beautiful things in nature and deserve to be in every garden, they sell only in small numbers. We frequently buy stock and try again to sell only to have nearly all left on hand and perhaps too dry to do well when we finally plant them. This year we are buying none and offer you only one variety that is very good and very easy to grow in your garden, north or south. It is not affected by the Lily disease.

Lilium Willmottiae. Grows to 5 ft. tall. Orange red flowers, with small brown spots and reflexed petals. 50c ea. Delivery in December.

Dutch Hyacinths. We have been growing on some imported from Holland several years ago and they do very well here, as they do in most of U.S. **Culture.** The best soil is a sandy loam. Full sun or half shade. Cover by 3" soil in south and deeper in the north with a protective mulch.

Assorted Varieties. 1 $\frac{1}{4}$ " to 2" diam. 15c ea. $\frac{3}{4}$ " to 1 $\frac{1}{4}$ ", a size that will flower, 10c ea. Under $\frac{3}{4}$ " are good propagating stock but unlikely to flower. 5c ea. 50c doz. 100 for \$3.75.

Scillas are closely related to Hyacinths. All are hardy except S. peruviana and it has been grown in gardens in Brooklyn on L. I.

Scilla hispanica. Resemble Roman Hyacinths. Require shade. Assorted colors, 35c and 50c doz.

S. hispanica, var. Excelsior. Giant, dark blue, 10c ea.

S. peruviana. An ideal bulb for pots as foliage is nice and the flower raceme is just above foliage on a short stem and wide and rounded in form. Usually blue flowers but we also have a few white. Hardy to N. C. on east coast, and in Long Island. These are worth 75c. We have a lot and offer them for 25c ea. or \$2.00 doz.

S. peruviana. Houdyshel hybrids. We like them so well that we have planted seeds and selected for beauty of foliage and flowers and for variations in color. We now have such unusual shades as markings of yellow, tan and rose and very ornamental wavy foliage. They are assorted, no choice of colors, but if you plant seeds of these you too will get variations. Price 60c and 75c ea.

Ornithogalum arabicum. A round, glossy black ovary in the center of a pure white flower make a striking contrast at Easter time. Hardy only in south, but in the north

they are easy in pots and bloom for Easter if planted early and grown in a cool room in good sun exposure. Low priced, easy to grow and desirable, early white flowers are a winning combination so we grow plenty. L. 15c ea. \$1.25 doz. One to a 5" pot.

Veltheimia viridifolia. This is one of the most beautiful plants one can grow in a pot. The glossy vivid green leaves are wavy margined and form a perfect rosette much like a bird's nest fern. From the center arises a scape with tubular drooping flowers closely spaced. The color is a deep rosy or purplish pink of an ineffable tone not found in any other flower. It begins to bloom, if planted early, in So. Calif. gardens or other equally mild climates or in pots in the north by Dec. 15 and continues for nearly 3 months as larger bulbs send up 2 to several spikes. **Culture** is very easy. Use a sandy loam soil to which is added fine screened peat or leaf mould about one-fourth. Some charcoal is good. Read general potting directions again. Order before Oct. 1 if possible as foliage starts in storage, but we can ship bulbs with foliage until Jan. 1, usually. Price, 50c and \$1.00 ea.

Tulips. We had a few left over last fall and planted them. Most of them are about the same size this year, 1½" diam., or over. We will offer them only in a mixture at 2 for 25c or \$1.00 per doz., until sold. ¾" to 1½" at 75c doz. Both are blooming sizes.

Tulip Culture. They prefer sandy soil to which is added much leaf mould, peat or compost. Heavy soils will do if sufficient leaf mould, rotted manure, etc., has been added. Plant in Oct. or Nov. Even Dec. will do but early is better. Water once and rake the soil surface when dry enough. Give no more water for about 3 weeks. In that time, they should become well rooted and should then be watered once a week all winter in Calif., unless it just happens that we get a good rain. Tulips may be left in the ground for several years.

OXALIS FAMILY — Oxalidaceae

There are two types, the winter and the summer growing. The summer growing species are listed in our spring catalogs. The following are all winter growers. These are brightest and most vivid of winter flowers for a sunny window or in the garden in the south. They give a profusion of bloom over several months period. A bed looks like a carpet of solid pink, rose, white, yellow, etc. The flowers are large, some over 1" diam.

Culture. Plant about 2" deep, 3" apart. Large bulbs may be farther apart and a little deeper. In pots, the smaller may go 6 in a 4" pot. Use good rich soil, altho they will grow in any soil. Give full sun exposure as they open only in full light and close at night. Order and plant early as they begin to sprout even in August. But they may be shipped even with long sprouts up to mid-October.

Oxalis Bowiei. A large plant with bright rose red flowers. 3 bulbs to a 5" pot. 5c each. 50c doz. \$3.75 per 100. Largest size 10c each.

O. cernua. Bermuda Buttercup. Deep golden yellow flowers. Very profuse. 5c each. 50c doz. \$3.50 per 100. Extra large jumbo bulbs 10c. 3 for 25c. 85c doz.

O. Grand Duchess. Low growing plants, but give a profusion of very large flowers in three colors. The **Pink**, **Lavender** and **White**, 5c each. 45c doz. \$3.00 per 100. Largest size 10c each.

O. crassipes. Flowers bright rose. Evergreen and everblooming. Increases by tubers and can be moved at any time. Plant at once. Large tubers 25c each. 6 for \$1.00.

O. crassipes alba. A pure white form. Very pretty and always in bloom. 50c each.

O. Regnalli. Large, truncate leaves, reddish on under side. Trifoliate. Evergreen and everblooming. Large white fls. Tuberous rooted. 35c ea.

Oxalis Special. The bulbs offered in this lot are assorted in size and color. They will all flower well. Some are accidentally mixed, others are surplus. Price, 30 for \$1.00.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or Zantedeschia, Black Callas and other Aroids.

Culture. All Zantedeschias and Arum palaestinum are suitable for pot culture. A.

palaestinum will start about Sept. or later. Do not put this bulb into moist soil before that or it will rot. *Zantedeschias*—pink, yellow and spotted leaf—may be potted by about Dec. 15. Don't rush them, as too much water before they start to grow may rot them. They may be held back and started in early spring, here in late February. All do well in the garden in a moist semi-shaded cool place. They are not hardy in cold climates; dig in fall. The White Calla usually blooms in California in the garden in late winter. They may be planted in early fall in pots or garden. All do best in mildly acid soils, on sandy side. For acidity add peat.

It is an error to keep large White Callas growing continuously. If rested thru summer you will be rewarded with flowers. Callas as pot plants need some sun, enough to prevent spindly growth, plenty of light and like all plants, good ventilation. They need abundant water but good drainage.

Zantedeschia aethiopica. Well known **White Calla**. They can be potted anytime between Sept. 1 and Jan. 1. Even later if available. Water once when potted to settle soil. Then keep soil barely moist until growth is well started. When growing well they need plenty of water and perfect drainage, give about half shade. They are hardy outdoors down to 15° but tops may be cut down by frost at about 20°. Blooming size, 25c. Large, 50c.

Z. rehmanni elegans. Light pink Calla. Easier to grow and flower than the dark pink. A few are very light, almost white when forced, but darker in the garden, but always beautiful. 50c each.

Z. elliotiana. Deep Golden Yellow Calla. Like all the callas, they need some sun. If they do not have it they grow too tall and weak and may fail to flower. Half sun is usually right. 30c ea.

Arum palaestinum. Black Calla. Solomon's Lily. Foliage and flowers are shaped like callas but flowers are black. Plant 4" deep in garden, not so deep in a pot. Begin to water about Sept. 1. Flowers in Feb. Large for 75c and \$1.00 ea.

Anthurium. Until very recently these have been high in price. We have had constant inquiries for them and now that prices are really reasonable we are pleased to list them. The cordate leaves make them useful as foliage plants alone but a mature plant will flower six times a year. Flowers are calla-like in red, pink and sometimes white. They are much used as florists flowers. Flowers last six weeks on a plant.

Anthurium andraeanum. Shaffer Hybrids. These are considered to be the best Anthuriums. Fls. up to 6" long, orange-red, varying to rose or white. 6" to 8" plants that should begin to flower at 10" to 12". Sometimes they flower even at 8". Assorted colors, \$3.75. Red, \$5.00. Shaffer's Best Red, \$6.00. Blooming size, about 12", assorted colors, \$6.00. Large plants in bloom, \$7.50.

A. scherzerianum. This species does not make as large plants or flowers as *andraeanum*, but they are interesting and pretty. Their advantage is their greater hardiness. They are easier for amateurs and as house plants. They are not quite so demanding about temperature and humidity. They flower from very small sizes. Blooming size, \$3.75. We have a few of the var. *Atrorubrum*, dark red, for \$6.00.

A. crystallinum. A beautiful foliage plant that does not need flowers, tho it has green fls. Leaves are cordate-ovate to 10" wide and 14" long, deep velvety green, prominently veined white. Pale rose on under side. \$5.00.

Spathiphyllum clevelandi. Close relative of *Anthurium* and formerly so classified. Fls. are white and freely produced. Very easy to grow. Blooming size, \$3.75.

Culture of Anthuriums and Spathiphyllums. These are tender tropical plants, suitable only for pot culture. Soil formula: We prefer to use about 1/4 old osmundine; 3/4 peat. Add enough sponge rock or coarse sand to hasten rapid drainage and aerate the compost. One can also add a little oak leaf mould. They will grow in any compost with sand. Add a thin layer of sphagnum on surface to prevent eroding the surface when watering. Set plant low in an oversized pot and as it grows, new roots are formed on compost surface which should be covered with more sphagnum. When compost surface reaches rim of pot, shift to larger pot.

A rounded tablespoonful of powdered dairy manure to a 5" pot is recommended.

We don't advise it. It is much better to use Spoonit or liquid manure once a month, after plants are well established. The preferred minimum night temp. is 60° or over. 45° does little harm other than to stop growth and flowering. 80° or over is a good daytime temp. Air should be very humid. Spraying foliage daily increases air humidity. They should never become dry. Water about every two days.

Shipping. These plants are set back seriously when shipped loose roots. We will ship in only one way—in clay pots, by express, f.o.b.

See our Spring catalog for other aroids.

THE GESNARIA FAMILY — Gesneriaceae

This family includes the following genera: Gloxinia, Sinningia, Saintpaulia, Episcia, Achimines, Smithiantha, Corytholoma, Isoloma, Gesneria, Tydaea, Streptocarpus and others. We list a number of these in our Spring Catalog.

Gloxinias. It is a considerable advantage to be able to secure these early as when ordered in Jan., delivery is slowed by cold weather. For that reason we usually plant a few tubers that should be sufficiently matured for Nov. delivery or earlier. This season we planted more than usual and can supply **Blanche de Meru, Emp. William, Emp. Frederick, Etoil de Feu, Mont Blanc, Prince Albert, Princess Elizabeth, Roi des Rouges, Tigrinia, Violacea, Queen Wilhelmina.** These were 50c var. in Spring catalog, but now are larger and you have the advantage of early delivery. Price now 60c ea., we also have the following in very recent new sorts; **Frederick Benary**, (we find a few very fine deep violet colors in these beside the scarlet with white throat), **Beacon, Crimson Glow, Swiss Emblem and Rose Sensation.** Price of these, small tubers, \$1.00. For culture directions and descriptions send 10c for Spring, 1951 cat. none for free. These are all straight prices, no dozen rates. Order early as we have few. If we are out of variety ordered we will send a substitute as near like it as we have. It is best if you name second choices.

Gloxinia Seed. We saved seed from several varieties including some of the newest. This is mixed seed and you should get a variety of colors. The seedlings flower the first year. Small packet for 50c. **Culture:** We prefer to plant in almost pure, well broken up peat, in a large clay pan. Some sand may be added but no soil. Be sure peat is completely wet, thruout. Level the surface and sow the seed, thinly, as nearly all grow. Cover pot with pane of glass and no watering is likely to be needed until they are all up. Keep warm, 60° to 80°, and in full shade. You will need to transplant when they begin to crowd, into 3" pots.

Streptocarpus are very close relatives of Gloxinias but are fibrous rooted and can only be moved as growing plants. The culture is much the same except as to temperature. They thrive in a cool house and are easily grown in a lath house in summer. The color range is similar. The flowers are smaller and freely produced. They are followed by long twisted seed pods, hence their name. They are easily grown from seed, which save, as we have no seed for sale. We pack plants in their own soil and ship carefully which adds to the cost. Order early. They cannot be moved in winter. "**Assorted hybrids,**" \$1.00 ea.

AFRICAN VIOLETS — Saintpaulias

The later is the correct botanical name. They are the most popular of all house plants at the present time and they are likely to retain this eminent position in popular favor indefinitely, as they deserve it.

Saintpaulias were discovered by Baron von Saint Paul who sent seed to Europe where they first flowered in 1893. They are natives of the Usambara district of Tanganyika, equatorial east Africa. Tanganyika includes Lake Victoria, source of the Nile, on the north and extends 12° south. It is entirely in the tropical zone. It is always summer, with almost no variation or seasonal changes in the climate. Due to the hot Indian Ocean on the east, the humidity is high.

They were discovered by the Baron in two places, both in tree covered areas. In one, at an elevation under 150 ft., they were found both in rich soil full of humus and

in the fissures of limestone rocks. In the second place, they were growing on granite rock at an elevation of 2,500 feet.

The mean average temperature at lower elevations is 80° with little variation on either side. It is a "mean" temperature for the white races and few live there. At higher elevations the mean average is about 70°, which is not uncomfortable, but monotonous..

The Saintpaulias soon spread from Europe to most countries where house plants are grown. Their popularity was instant and always growing in intensity. Mrs. Wilson, in her book, "The African Violet" records the first real test of their popularity. In the fall of 1946, an Atlanta, Ga., nursery sponsored the first African Violet Show. The thousands who attended from everywhere created a traffic problem which extra police could scarcely handle. Later, someone in Manheim, Pa., grew a plant with an off-white flower. It was advertised as a yellow, and created a furor. Collectors from many states visited Manheim to see it, to buy plants or leaves. Local citizens were besieged by questions to the point of much discomfort. The myth of a yellow Saintpaulia still lives and we get inquiries for them nearly every day. We would like to answer this question once for all. But it will not be for always. It will crop up for many years.

There is, there never has been and there probably never will be a yellow Saintpaulia.

Culture of Saintpaulias. Climate and soil conditions in the habitat of a plant supply a good starting point for the discovery of their proper cultivation. Plants possess a variable degree of tolerance and adaptability. Often a plant or an animal, transplanted to new conditions do better in the wild or under culture in the new situation. For example, rabbits in Australia, the English Sparrow in America and Cactus in Africa appear to have gained by transplantation.

African Violets under the hand of man have been vastly improved and many new colors and forms have been produced. Grotei, the climbing African violet, and other new species have been discovered. They have also adapted themselves to somewhat different conditions. They are strictly house plants only.

The advised **range of temperatures** for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15°, they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40°. It may be that if kept at 50° for some time they might then survive a lower temperature. But they neither grow nor flower at 50°. Therefore it is impossible for us to send you blooming plants or any plants by mail in winter. Nor do we ship on very hot days in summer. Since they like good ventilation we plan to ship so that they do not arrive to you on a week end and thus remain in a carton a day or two.

As growers seeking to sell plants to amateurs, we are interested in your success and for that reason we plan our shipping dates as explained and tell you how to grow them when you receive them. It is not enough that you receive nice plants in bud or bloom. They must continue to grow and bloom for you. Some growers overlook one factor. Mrs. Rector in her fine book on African Violets relates the practice of one grower who keeps his greenhouses heated to 80°. The plants grow more rapidly and flower much younger at this temperature but when transferred to living rooms, most of the old top dies off and the plants do not flower again for from 6 mo. to one year. Our Saintpaulia Greenhouse is heated and air conditioned. The thermostats are set to regulate the temperature range to that which is usually found in living rooms. Thus there is no great shock to set the plants back when moved. Many of our customers report first that plants are received in excellent to perfect condition and later that they are still flowering.

Watering. Do not ever use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with

a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. If late in morning cover plants with newspapers after watering, until dry. The interval between waterings should be long enough to permit the top soil to become slightly dry.

Very many advise to set the pots in a pan of tepid water, and to remove when the surface becomes moist. This is an allowable practice but it requires supplementary procedures. One must sometimes spray the foliage and also water from the top of pot part of the time. Culture advice for any house plant usually says, "Be sure the drainage is perfect." But sub-irrigation does not result in perfect drainage. Not enough water is likely to drain away when removed from a pan of water. Most of us must use hard water containing soluble alkaline or other salts. When subirrigated these salts remain in the soil and are added to by each irrigation. Nearly all cultivated plants, particularly shade loving plants, require some leaching of the soil to remove excess soluble salts. Continued too long, subirrigation may raise the soil pH sufficiently to stop flowering.

Good **ventilation** is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

Soil formulae. Some growers sell prepared soils. Probably they are nearly all good. But the plants have a considerable tolerance and do well in a wide variety of soils. They should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore are not good.

We use about one half oak or redwood leaf mould and one half sandy loam or good loose garden loam. To this is added enough sponge rock or coarse sand to make the soil gritty and aid drainage. Fine screened peat is as good or better than leaf mould. It is not at all necessary to buy prepared soils.

Fertilizers. We use only Spoonit and recommend it to be applied once a month, on a day following watering.

Sun exposure. Most of the advice one receives over-emphasizes shade. Lack of sufficient light intensity seems to us to be one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus our plants bloom profusely all winter. Very likely, plants in a south window, anywhere in the north temperate zone, in winters, will be sufficiently shaded by a thin muslin curtain. Remove the curtain on dark days.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The plants need much light. The color of the foliage will tell you what they can endure. When healthy plants have light, yellowish foliage they probably receive too much sun. Medium green is about right. Very dark green foliage indicates insufficient light and lack of flowers corroborates it.

Humidity. Saintpaulias bloom better in a relative humidity of 60% to 70% altho they live and appear healthy at a much lower degree. At this moment the humidity of our violet house is 62%. In our kitchen, it is 28% at 80° temperature. In other rooms it would be lower. Heated rooms are likely to be 25% relative humidity or less, at times. It would be uncomfortable for us to live in a room sufficiently humid for violets. One can localize a higher humidity around the plants by setting the pots over a saucer containing gravel and sand and filled with water which does not quite touch the pots. Mrs. Rector's book, "How To Grow African Violets," (see Garden Reference Books) suggests a tray made from a chick feeder, with wire guards removed. Many sizes are available at feed stores. In the bottom place sand, gravel or coke with water. Plants set in these trays will have a sufficiently humid atmosphere.

Pests. Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. One way to remove and kill them is to use a bit of cotton on end of a toothpick. Dip the cotton in alcohol and pick off the bugs. Do not touch foliage with the alcohol.

Cyclamen mites are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mite spreads to all the plants and effective measures must be at once applied. An effective measure is to immerse entire plant and pot in water at 110° for 15 min. Keep water at this temp., adding more hot water. Wash shelves and pot saucers with ammonia solution. Repeat the treatment one month and again two months later.

We offer **Hexotine** under Garden Supplies. Used according to directions this spray is an effective control of mite. Several sprayings at 7 to 10 day intervals will be needed. It may cause temporary loss of flowers. The spray must be used at once when mixed. Prepare only enough for 15 minutes use. Plants may be dipped in solution of 2 teaspoonsfuls to one gallon of water.

Sodium selenate will keep plants free of all insects. It is a dangerous poison. Discarded soil must not be placed in a vegetable garden or under a fruit tree as it may thus poison those who eat the fruits or vegetables. The method of use is described in the African Violet books which we list. Read them both on this topic. Space does not permit a full discussion here for this or some of the less destructive pests and diseases.

In the following list you will find most of the latest and best. If one that you want is not listed we may have it in too small a quantity to list. Please inquire. Names in parentheses are synonyms of the listed name or the name of originator.

Azure Beauty. New 1951 Double. Blue and white variegated. Very pretty. \$2.50.

Black Beauty. (Mentor Boy Supreme). Very vivid blackish purple of even tone. A favorite with customers. \$2.00.

Blue Delight. 1951. Two-tone like Blue Eyed Beauty but more pronounced darker blue eye. \$2.50.

Bi-color. A good grower and profuse bloomer. Flowers plum colored on tips of upper petals, rest of bloom pale lavender, \$1.00.

Blue Eyed Beauty. New two-toned hybrid. White flowers with a sparkling porcelain blue overlay at the edges of the petals and encircling the bright eye. Very heavy bloomer. \$2.00.

Blue Eyed Sue. (Hendrix). First time listed. Lovely heart-shaped girl foliage, fluted edges. Blue flowers. \$2.00.

Blue Girl. Pat. Deep blue-violet flowers. Graceful heart-shaped foliage, fluted edges, \$1.00.

Blue Girl Compacta. Very compact girl foliage. Med. blue flowers. Small plants, \$1.50.

Blue Girl Supreme. Deepest blue violet. Very large flowers and leaves. \$1.50.

Blue Heiress. 1951. New Dupont girl foliage, large deep blue flowers. \$2.50.

Bronze Girl hybrids. New. Bronzy leaves. Very beautiful flowers, some are red, others deep violet. Foliage and flowers vary but all are beautiful. \$2.00.

Bugle Girl. (Hendrix). First time listed. Beautiful scalloped foliage. Orchid flrs. \$2.50.

Delight. New 1951. Double. Solid light blue. \$2.50.

Dbl. Margaret. Dark violet blue fl. \$1.50. Leaves saw-toothed.

Dbl. Neptune. (Queen Neptune). New. Large, fully double flowers. Perfect form. A profuse bloomer. Dark quilted leaves of great size. \$2.00.

Double Orchid. \$2.00.

Dimples. West Coast var. Dark green spooned foliage with medium blue flowers. \$2.00

Dupont No. 1. Dark blue, very large flowers. \$1.50.

Dupont No. 5. Light blue flowers among the largest. \$1.50.

Dupont Lav. Pink. \$1.50.

Dupont Silver Pink. Flowers silvery lavender pink. \$1.50.

Fantasy. Lavender, variegated and splotched flowers. \$2.25.

Fringette. We have a few **Dark Blue, Blue Lavender and Red Lavender** at \$1.50 ea. Please give us a substitute in case we are sold out. Or, say you will wait until more are ready.

Fischer's Dbl. Crystal Blue. We have only a very few of these at \$2.00.

Geneva Rainbow. New west coast 1951 introduction. A good companion for Lady Geneva. Burgandy with white border. Favorite with customers at our greenhouse. \$2.50.

Gorgeous. Pat. Spooned foliage. Orchid flowers. \$1.50.

Gorgeous Bicolor. New. A most beautiful large flowered var. Available about October. \$2.50.

Gypsy Queen. Lavender pink flowers in abundance. \$1.50.

Grotei. The climbing violet. Small plants \$2.50, while they last. If sold out when order is received they will be shipped when available again.

Jivaro. (Hendrix). Blue fls. Heart-shaped hairy leaves. \$2.00.

Lacy Girl. New. Thick round leaves. Immense dark blue fls. Small plants. \$1.50.

Lady Geneva. Pat. Blue with white border. One of most popular varieties. \$1.50.

Lavender Beauty. New. Lovely silvery mauve flowers. Very large. \$2.50.

Lavender Pink Princess. Very pretty plant and flowers. \$1.75.

Marine (Harris). West Coast. Very large med. blue flowers. Makes a lovely large plant. \$1.50.

Maroon. West Coast. One of the darkest reds. Small plants. \$1.50.

Maroon Brocade. Red double. \$2.00.

Orchid Girl. Orchid flowers with very pretty girl foliage. \$1.00.

Orchid Wonder. New. Makes a very lovely plant with bicolor flowers of huge size. \$2.50.

Periwinkle. Light blue flowers. \$1.75.

Pink Amethyst. Lavender pink flowers in abundance. \$1.25.

Pink Beauty. Pat. True pink. 75c.

Pink Delight. 1951. Light clear pink flower, bronzy foliage. \$2.50.

Pink Girl. Pat. Deep pink flowers with girl foliage. \$2.00.

Plum Glory. New West Coast introduction. Plum colored flowers in abundance. \$2.00.

Purity. 1951 fall introduction. Pure white double. Available about October. \$2.50.

Purple Dawn. New 1951. A solid bluish-purple, impregnated with deeper purple veining in flower, a distinctly new color in violets. A profuse bloomer. \$2.50.

Purple Prince. Very good bloomer. Deep purple. \$1.00.

Red Chief. 1951. Dupont foliage, red bicolor blend. \$2.50.

Red King. A rich burgundy red against velvety foliage. Does not fade. Good growing habit. One of the best. \$2.00.

Red Velvet. New 1951. Two-tone red, shading to lighter red lower petals with upper petals resembling red velvet. A profuse bloomer. Heavy dark green foliage, veined red underneath. \$2.50.

Rose Double. New fall 1951 introduction. Rose and white variegated double. Will be sent as soon as available. \$2.50.

Ruffles. Very dark green pointed leaves. Small dark blue flowers. \$1.50.

Sailor's Delight. 1951. Light blue double flowers, girl foliage, excellent, \$2.50.

Sailor Girl. Light blue flowers with girl foliage. Good bloomer. \$1.50.

Sea Girl. 1951. Double. Medium blue, excellent. \$2.50.

Sherry Girl. Beautiful dark green girl foliage. The leaves with crenate edges are most formally arranged in a perfect rosette. Blue flowers held well above foliage. Sm. plants only. \$2.50.

Spoon Girl. (Hendrix). Lovely spoon girl foliage, a must for your collection. Blue flowers. Sm. plants only. \$2.50.

Snow Girl. 1951. Pure white flowers, girl foliage. \$2.50.

Snow Prince. 1951 introduction. Beautiful foliage with lovely white flowers in abundance. We think best white to date. \$2.50.

Submarine. (Harris). Makes very large leaves and flowers. Sm. plants. \$2.00.

Sunrise. Opens red; blends thru orchid to a beautiful opalescent. Flowers remain for long time. Very outstanding. \$1.50.

When you order we advise that you name a few substitutes. Our stock is small on

a few varieties. Some are very new and not even yet in the hands of large commercial growers. So, if you name some substitutes or state that you will wait for delivery on any we are out of, (in case you want just that one only) it will aid us in making prompt delivery. On most of those listed, we believe our stock will be sufficient to meet demands.

Shipping Saintpaulias. Our packers are expert and long experienced. We have sent plants to Kodiak and Fairbanks, Alaska, near arctic circle, and they arrived in perfect condition, still in bloom. We have shipped to Cuba, Dominica, Costa Rica and to every state.

We **guarantee** delivery in a growing condition. But you must send us the extra fee for Special Handling. This speeds delivery and more careful handling.

Since the plants are killed by temperatures under 40°, we cannot ship by mail during cold weather. They will go safely by express to a little later date than by mail. Perhaps safest way, when cold, is to have them shipped by air express. In this case one should arrange to receive them at the airport and transport in a heated car. Air Express is less expensive than you think. 2 lbs. for 2,350 miles costs only \$1.55 and 5 lbs. costs \$3.68. If it is important that you get plants after it becomes too cold to ship by mail it is best to have them come by air express at your expense for the charges. In mid-winter or during your coldest weather it is better to wait.

RANUNCULUS AND ANEMONES — Ranunculaceae

Ranunculus range in color from red, pink, yellow to white. This strain if well grown produces giant double flowers on tall stems.

Anemones are red, pink, white and blue but blue predominate. The flowers of this strain are mostly single which we prefer in Anemones.

Culture. They are hardy only in the deep south. The best planting time is Sept.-Oct., in So. Calif. Bulbs start better in a medium temperature. In hot weather, start them in a flat in the cool shade of a tree. In cold weather start them in a moderately warm room. When not over 1" high transfer to garden. For pots, place pots when starting the bulbs as directed for the flats. The best soil is rich sandy loam. To heavier soils add much leaf mould. Do not water much when sprouting as the best bulbs will rot if too wet.

We offer only the large size. They cost much more per bulb but each bulb gives so many flowers that your flowers cost no more and are earlier, larger, better and more sure.

Tecolote Giant Double Ranunculus. 2 for 15c. 50c a doz.

Anemones, large size bulbs, same price as Ranunculus.

THE ORCHID FAMILY — Orchidaceae

Until recently, it was not believed that orchids could be grown by amateurs or as house plants. Now we know that Cymbidiums and Cypripediums are easily grown in living rooms if humidity is increased by a method as we advise for African Violets. Some are even able to grow Cattleyas as house plants but minimum temperatures should be 50°.

Cymbidiums are very useful for corsage flowers. We can supply the following, **Butterfly**, cream to tan; **Doreen**, greenish bronze; **Giganitemum**, red-brown; **Insigne**, light rose on white; **Moira**, greenish bronze, barred rose; **Winter Cheer**, bronze and deep rose; **Zebra**, lavender pink. Price \$2.50 per front bulb with foliage. **Madeline**, deep pink, \$5.00 per bulb with foliage. **Hookerianum**, olive green, \$7.50 per bulb with foliage. **Assorted varieties**, unlabelled, \$2.00.

We ship Cymbidiums, loose roots, by mail, postpaid. We do not ship them in pots. It is expensive and unnecessary. These one-bulb plants should flower in 2 or 3 years, in pots with correct culture. Only a very few flower the first year and not many the second. Clumps of two, three or four bulbs have a correspondingly better chance to flower early. They cost 2, 3 or 4 times the price of one bulb.

Culture. They may be grown in pots or in the ground under trees or lath house where winter temperatures never go below 24°. Establish a bulb in a 5" to 7" pot in a compost of leaf mould and/or peat. To this add about 25% sand or rich sandy soil.

Water to settle soil. Then spray foliage daily for a couple of weeks but water only a little. After that gradually increase watering. For more complete culture instructions, send 25c for our 10-page booklet, "How To Grow Orchids."

Cypripedium insigne. Usually the upper sepal is green with brown-purple spots. Petals, yellowish green. There are many variations from this. Fls. about mid-winter. Prices, \$3.50, \$5.00 and \$7.50. The \$5.00 size should flower this winter. Probably also the smaller size. We ship Cyps. in clay pots, via express, f.o.b. only.

Cyp. Callosum. Flowers in Spring. Spotted foliage and a more tender plant. We find plants difficult to get and price for very small plants must be raised to \$5.00.

Culture. Insigne is hardy down to 28° Callosum about 10° higher. Do not keep plants in a soggy condition which causes rotting of roots. Nor should they ever become entirely dry. "Moist" is the correct condition. For more information about culture send 25c for 10-page pamphlet, "How To Grow Orchids."

Cattleya Orchids. Our greenhouse is crowded and we must sell a lot of Cattleyas to make room. They grow and multiply and we cannot divide and repot until we have bench space available.

We can supply the following at a very low price. **Cattleya amethystina**, rose with purple lip. Apr. to June. **C. Gaskelliana**, rose purple. May-Sept. **C. gigas**, rose violet, \$5.00 to \$7.50. **C. Mendeli**, white to light rose, June. **C. Mossiae**, light to dark rose purple, Mar. to June. \$3.50, \$5.00 and \$7.50. **C. Percivaliana**. Rose purple, Dec.-Jan. **C. Schroderae**, from white to deep rose purple, about Easter. **C. speciosissima**, "The Elegant Cattleya," rose with amethyst lip. Summer bloomer. Prices reduced to \$2.50, \$3.50 and \$5.00, except **C. gigas** and **C. Mossiae**, all 8 Cattleyas in \$5.00 size for \$35.00. Late in season we may have to substitute for one or two sorts. Please do not prohibit this.

Extra Special. Do you want to experiment with Cattleyas? We have some plants with fewer or smaller pseudo-bulbs that need repotting. We do not have room in our two greenhouses, nor the labor to do it. These are in 5" pots, mostly. Nearly all the varieties listed above are included with a few others. Selection must be left to us but you may tell us what you have and we will not duplicate them. All are named and labelled except a few hybrid strays. They were potted over 2 years ago and repotting into fresh osmundine will give renewed growth. Price \$1.50 ea., in clay pots, express, f.o.b. These could be sent by mail loose root but this is not quite so favorable. Price by mail, postpaid, \$2.25. Enough osmundine to repot one plant, about $\frac{1}{4}$ lb. 35c.

Directions. If in standard clay pots, (4" or 5" size) fill pot with $\frac{1}{3}$ drainage material, pea gravel above one inverted pot fragment over hole. Cut moistened osmundine into 1" pieces. Pack this very firmly around and under plant, punching it down with a potting stick which may be top end of small broom handle flattened on end like a blunt chisel. Be careful not to bruise or break living roots. Upper surface should be very firm, flat and $\frac{1}{2}$ " under rim.

Set newly potted plants in shade. Do not pot water for about 3 weeks and then very little until growth starts. But spray foliage daily letting only a little fall on osmundine. Growth should start in from 3 to 8 weeks. Pot water very little until roots start. Spraying adds enough humidity. Much moisture of osmundine delays root formation. Sun will ruin foliage when not rooted. It will cost you very little to experiment and when you have grown them into large size, they should be worth \$7.50 to \$10.00 each.

Bletilla hyacintha. Hardy Chinese ground orchid. Does well in your garden in 25% shade or even almost full sun. Best soil is sandy with much peat or leaf mould added. Keep well watered. The bloom arrives in very early Spring and has even pushed up under a light cover of snow as related by Col. Grey in England. It is hardy at least to zero. There are 6 to 10 small orchids in true orchid form and purple color on an erect stem. 85c ea. 3 for \$2.10.

Maranta Kerchoveana. A very nice, easy to grow, foliage plant for pots that does best in shade. The ovate leaves have two rows of darker blotches, hence the common name, Rabbit Tracks. In orders over \$1.00, the price, loose roots, is 50c. If ordered alone send 75c.

Maranta sp. Taller plant. The foliage striped light and dark green on upper side with

a few white stripes and blotches. Red on under side. I have seen it labeled, *M. bicolor* and *M. tricolor*, but it has 4 colors in foliage. Rare. Price, \$2.00.

Pot Marantas in 5" pots in peat or leaf mould with a little sand, in shade and keep well watered for rapid growth.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include *Billbergia*, *Cryptanthus*, *Aregelia*, *Tillandsia*, *Neoregelia* and many more genera. We list only *Billbergias* which includes some of the most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical or semitropical epiphytes and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do.

Billbergia calophylla. Large, bronze-green foliage with contrasting bars of grey. Very showy inflorescence of blood-red bracts and blue flowers. \$2.00.

B. corina. Beautiful foliage, barred grey. \$2.00.

B. distachia. Foliage, reddish green with cream spots. Long flower racemes with rose pink bracts and blue flowers with green margin. Blooms early spring and again in late summer. 50c.

B. nutans. The most popular of all as it blooms in midwinter and is very lovely. Pink bracts, blue and green flowers. 50c. Three for \$1.00.

B. Pyramidalis Hybrid. *Pyramidalis x Amoena.* Both parents are outstanding and this hybrid is no less. Beautiful in foliage and inflorescence. \$2.00.

B. rubro-cyanea. The most colorful in foliage, showing green, white and red combinations. Inflorescence, crimson bracts, flowers green, edged dark blue. \$1.00.

B. speciosa. Foliage green above. Under side greyish green. Bracts rose, flowers pale green tipped with blue. \$2.00.

B. Theodore L. Meade (Meade's Hybrid). *Nutans x Nobile.* Handsome green foliage with vivid large inflorescence. It is called an everbloomer. But this does not mean that one plant blooms continuously or even almost. However, a large group of plants will show flowers for nearly the entire year. It has no definite season but flowers from new leads as they reach the proper maturity. \$2.00.

B. thrysiflora. Mature foliage faintly barred. Summer blooming. Vivid inflorescence, scarlet bracts, blue and purple flowers. \$1.50.

B. Zebrina. Leaves with contrasting white bands and spots. Salmon bracts and green flowers. \$1.50.

Collection of all ten varieties, \$12.00.

The Big Four Collection includes *Nutans*, *Distachia*, *Rubro-cyanea* and *Zebrina*. Here you have the most colorful in foliage and a mid-winter bloomer, that would cost you singly \$3.50. The 4 for \$2.75.